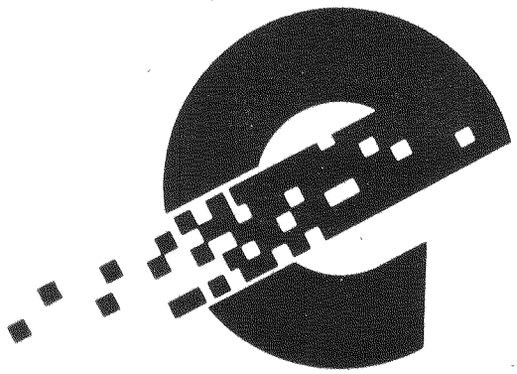


Environmental Consultant Company

PREPARED FOR:

INTERMOUNTAIN POWER SERVICES CORPORATION
DELTA, UTAH
OCTOBER 18, 1999
TLN 357G

Environmental Consultant Company
dedicated to filtration science . . .

P.O. Box 42537 • Phoenix, AZ 85080
602-582-5155 • Fax 602-581-9264
Laboratory: 2501 W. Behrend Dr., Suite 77 • Phoenix, AZ 85027

Note
Our New
Area Code
623-582-5155

REPORT
INTERMOUNTAIN POWER SERVICES CORPORATION

Reference: Unit 2 – TLN 349G

One filter bag sampled from Unit 2 was submitted to address increased pressure differentials.

The bag has been in service for 10 years however experienced the same suspected moisture excursions as the TLN 349G Unit 2 bag recently installed.

This bag specimen exhibited the same general characteristics as the TLN 349G filter bag in that the top zone is higher than the bottom area in permeability acceptances.

All flows are lower than TLN 349G however, the same profile is evident.

Low flow throughput did extend upward to the middle area as compared to only the bottom section of TLN 349G bag.

The as received ash cake structured also revealed this densification characteristic following the same characteristics as TLN 349G.

The top area did contain agglomerations however yielded a higher level of voids, with the structure as compared to the bottom of the bag.

The bottom and middle areas exhibited a denser cake and substantially reduced voids for throughput.

Photo A is a view of the top area revealing the high voids/less dense cake compared to the middle (**Photo B**) and bottom areas (**Photo C**).

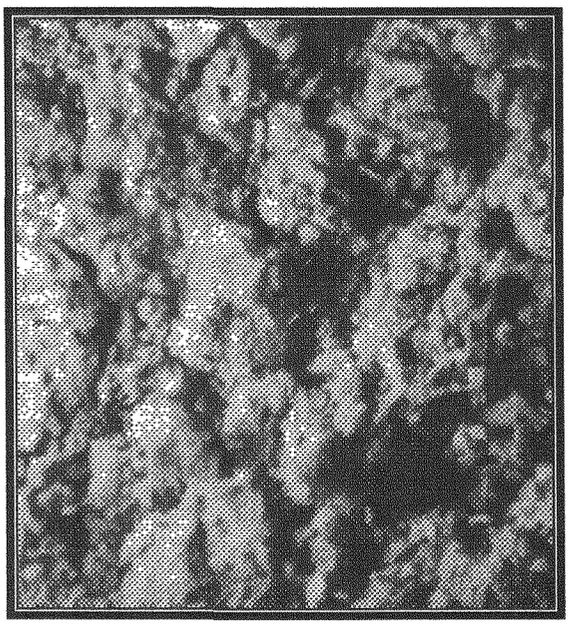


Photo A

Photo B

Photo C

Noted is the low voids evident in the densified cake of the middle and bottom area.

Cleaning generated the same continued profile of low flows in the bottom up to the top area where nominal levels are present.

Photo D (top) compared to **Photo E (middle)** and **Photo F (bottom)** are views of this profile of retention corresponding to the flow capacity readings.

Photo D

Photo E

Photo F

All densified dust yielded the hygroscopic calcium sulphate salt as the binder indicative that moisture leaks into the flue gas is responsible for the agglomerate structure and resulting low throughput.

It is reported that sonic assist is in the system.

This sonic impact in the upper bag area may account for the improved flows in the top bag areas of both this bag and the TLN 349G bag.

The sonic power level is reduced/absorbed as it travels down into the compartment for re-claim it is suggested to place horns (portable) for firing near or at the bag bottom area for disruption of the dense cake similar to the upper bag zone.

Sonic power low Hertz (@ 125 db) and high power levels of 140 plus db levels are most effective in breaking up the dense agglomerations.

The sulphate salt bonded nodula are disrupted under 140 plus db power levels.

This bag also exhibited good tensioning levels with no abnormal wear evident resulting from a slack condition.

All current losses are the result of physical fatigue from service use.

There is no chemical or thermal deterioration evident.

The bag is rated at 80% termination indicative of continued 2 years service use.

Prepared for: INTERMOUNTAIN POWER

Date: 10/18/1999
TLN : 357G
Page:

Identification: UNIT 1 - 10 YEARS
Fiber Content: FIBERGLASS ECDE

Fabric Construction: WOVEN
Weave: 3 X 1 TWILL
Count:

Yarn System- Warp/Length: 37-1/0F
Filling Width: L75-1/2T+75-1/0F

Avg. Weight [oz/sq yd]: 13.37
Thickness [inches]: .014
Density Factor:

Treatment- Physical Type: NONE
Chemical Type: ACID RESISTANT

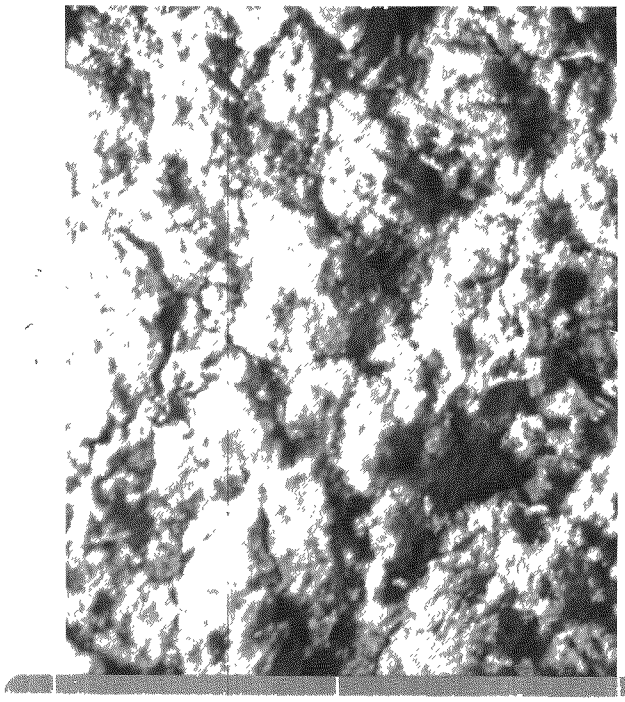
% Ignition Loss [LOI] ---> 500°F/1 Hr: 0.03%
1150°F/1 Hr: 3.93%

% Extractable Matter: SULPHATES
Acid Alkaline [PH]: ALKALIN

Fabrication
Seaming: CHAIN
Cuffing: LOCK
Ring Cover: LOCK
Hardware: CR
Sewing Thread: FIBERGLASS ECB
Fabrication Rating: GOOD

PROFILE DATA			TOP	CENTER	BOTTOM
Weight [oz/sq yd]	As Received		24.11	25.17	26.11
	Cleaned (Vacuum)		19.45	20.63	20.29
	Cleaned (Washed)		13.37	13.40	13.35
Permeability CFM/sq ft @ .5" H2O	As received		3.07	2.20	1.78
	Cleaned (Vacuum)		8.0	6.4	4.5
	Cleaned (Washed)		49.5	46.8	48.8
Breaking Strength lbs/inch	Warp/Length		219	221	174
	Filling/Width		94	95	81
Breaking Strength % Loss	Warp/Length	@ 500	56.20%	55.80%	65.20%
	Filling/Width	@ 350	73.14%	72.86%	76.86%
Mullen Burst (lbs/sq inch)			178	180	161
Mullen Burst % Loss		@ 750	76.27%	76.00%	78.53%
Flex Cycles [MIT Method]	Warp		15079	14483	11009
	Fill		3942	3725	2121
Flex Cycles % Loss	Warp	@ 50,000	69.84%	71.03%	77.98%
	Fill	@ 10,000	60.58%	62.75%	78.79%
Other Testing					

IP12_006532



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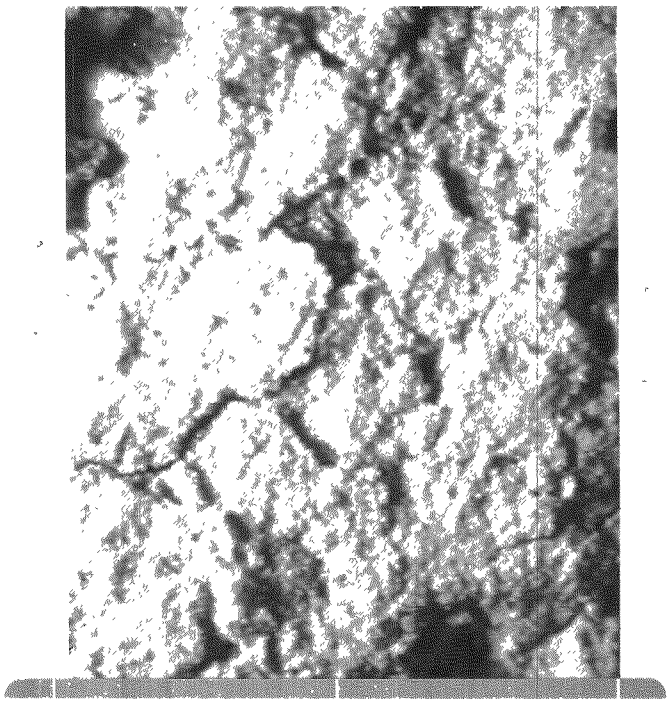


PHOTO B

PHOTO C

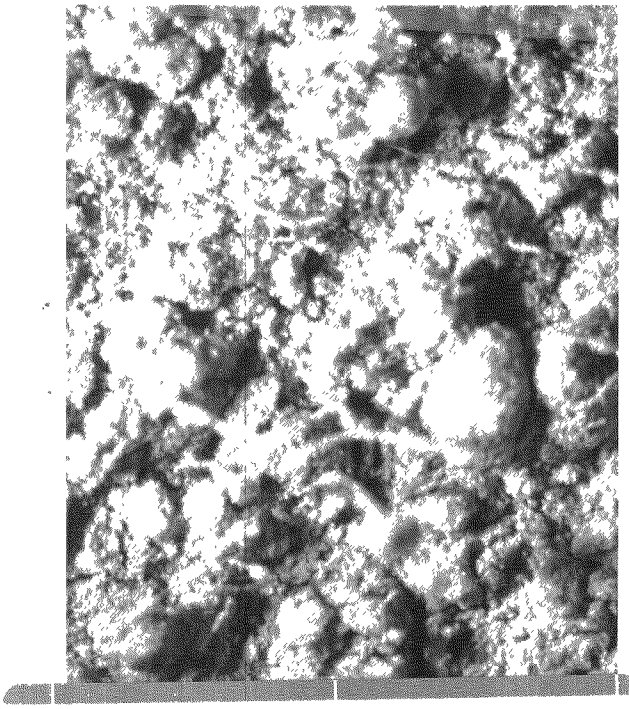


PHOTO D

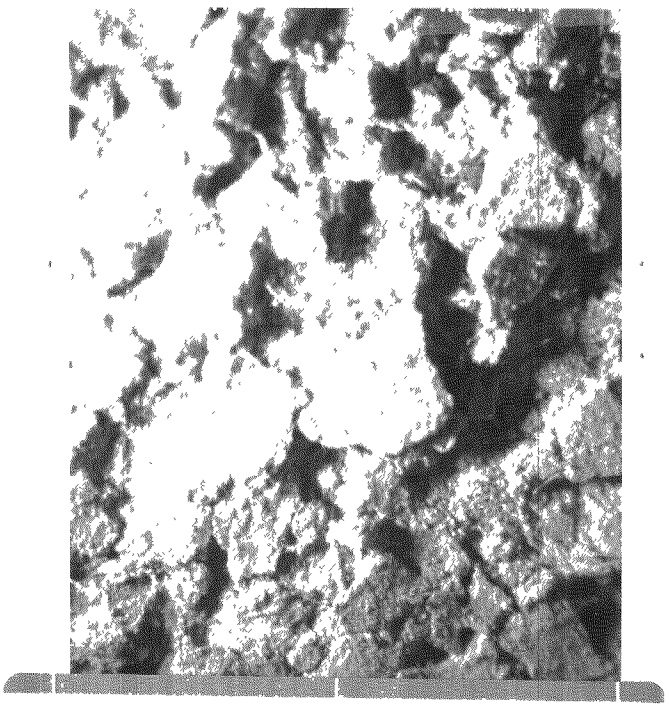


PHOTO E

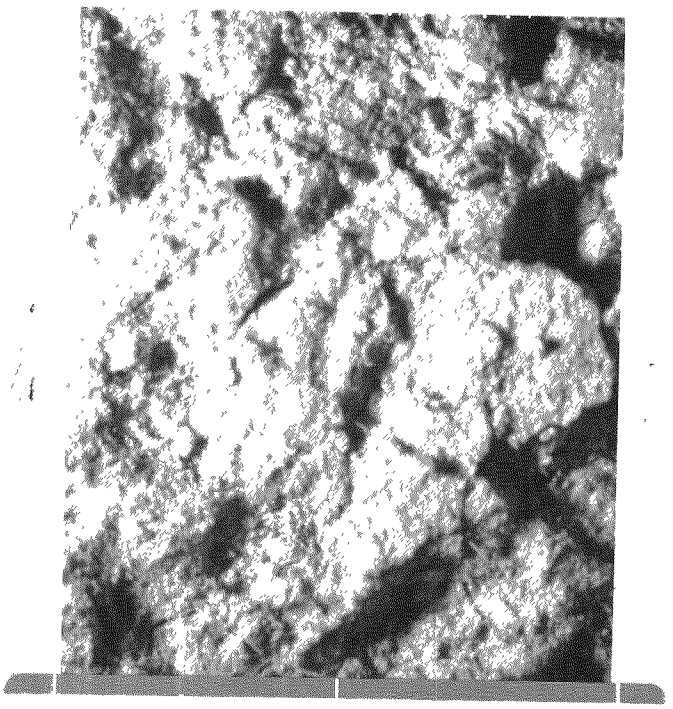


PHOTO F

Environmental Consultant
Co., Inc.

Laboratory: 2501 W. Behrend Drive
Suite 77
Phoenix, Az 85027
Mailing: P. O. Box 42537
Phoenix, Az 85080
Telephone: (602) 582-5155
FAX: 602) 581-9264

Fax

To: John Howard From: Kathy
Fax: 435-864-6670 Pages: 1
Co. Intermountain Date: 10-18
Re: TLN 3576

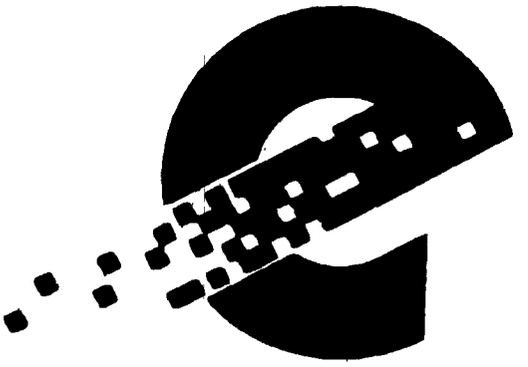
☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

The formal report copy will be mailed to your attention. Please do not hesitate to contact us if you have any questions about the report.

Thank you for choosing Environmental Consultant Company for your testing needs.

Grub?

KM



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October 18, 1999
TLN 357G
Page 1

REPORT
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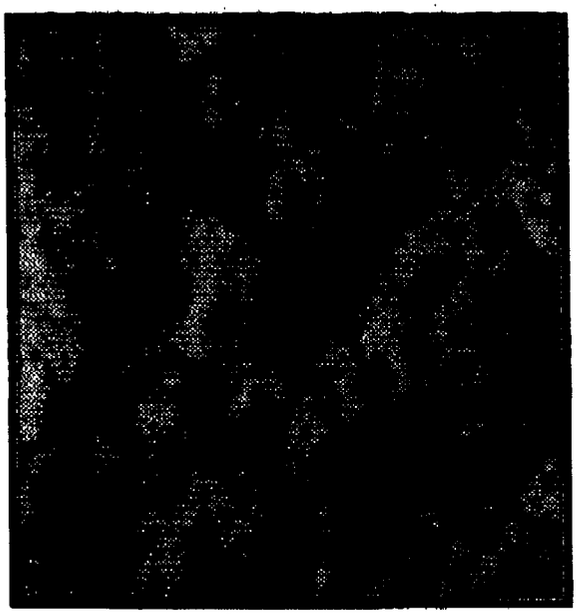

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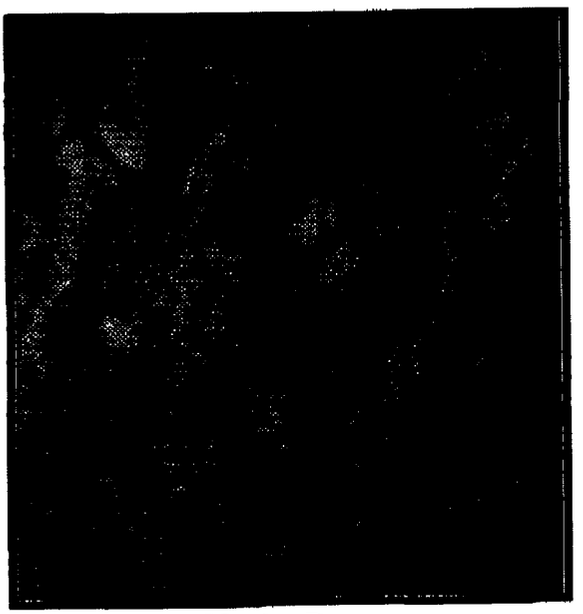
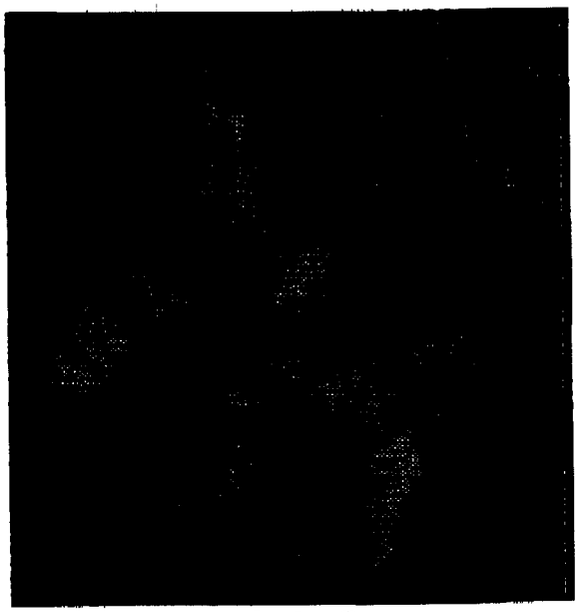


Photo B



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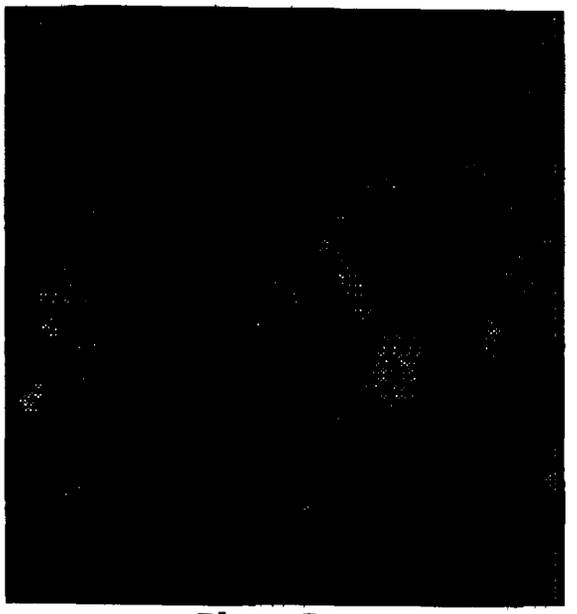
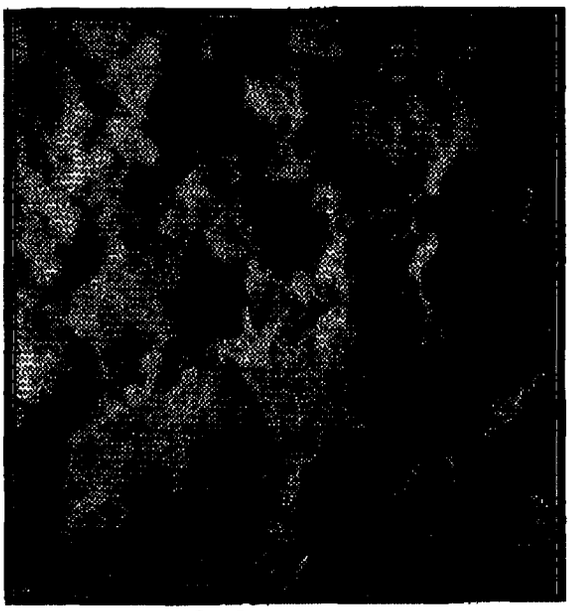


Photo D



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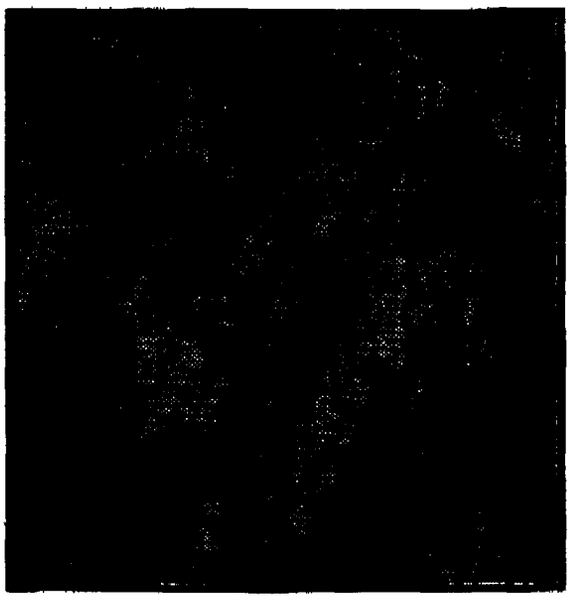

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Density Factor:

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Chemical Type: ACID RESISTANT

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1150°F/1 Hr: 3.93%

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Acid Alkaline [PH]: ALKALIN

Fabrication
Seaming: CHAIN
Cuffing: LOCK
Ring Cover: LOCK
Hardware: CR
Sewing Thread: FIBERGLASS ECB
Fabrication Rating: GOOD

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